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ABSTRACT

This paper presents statistics on the education systems of various areas of the world. The document includes six tables in which data are broken down into developed countries, developing countries, Sub Saharan Africa, Arab states, Latin America and the Caribbean, Eastern Asia and Oceania, and Southern Asia. Each graph gives a world total for figures presented. Table 1 represents population under 15 years of age in 1990, pupil numbers and educational expenditure in 1988. Table 2 illustrates trends in the size of the under-15 population group in millions. The paper predicts that population growth and the development of education will mean that education systems will need more finance, with the greatest changes continuing to occur in Sub Saharan Africa. Table 3 shows enrollment in formal first level education in millions. Table 4 shows enrollment in formal second level education in millions. Economic and financial difficulties are limiting state resources for education. The problem of finance for education does not arise in anything like the same terms in the industrialized countries, where population changes have stabilized and enrollments have already broadly developed, as in countries that are having to face up to considerable population growth and the expansion of enrollments. Table 5 represents trends in the proportion of gross national product (GNP) devoted to public expenditure on education. Table 6 shows trends in average expenditure per pupil in first and second levels as a percentage of per capita GNP. Recommended solutions include making better uses of existing resources and finding other sources of financing. (DK)

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International Commission on Education for the Twenty-first Century

THE FINANCING OF EDUCATION SYSTEMS

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The Financing of education systems

Working paper prepared by

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The financing of education systems

Working paper for the International Commission
on Education for the Twenty-first Century

With 950 million schoolchildren and students enrolled in 1988--more than a quarter of the population of the world--education systems are a vital part of society in all countries.

Countries set aside a not inconsiderable proportion of their resources to finance education, with State expenditure on education in 1988 representing a little over a thousand billion dollars, or 5.5 per cent of the world gross national product.

Enrolments and educational expenditure are unequally distributed throughout the world. Developed countries are responsible for 88 per cent of State expenditure on education, expressed in US dollars, but have 25 per cent of the world's schoolchildren and students and 16 per cent of the children under the age of 15. This difference is above all a reflection of the unequal distribution of wealth throughout the world, but it is also the result of a financial investment in education that is relatively greater in the developed countries (5.8 per cent of GNP in 1988) than in the developing countries (4 .1 per cent of GNP).

Table 1. Population under 15 years of age (1990); pupil numbers and educational expenditure in 1988

	Population		State expenditure on education		Expenditure per pupil at the first and second levels	
	<15 years (1990)	pupils students (millions)	billions of $US	% of GNP	$US	% of per capita GNP
Developed countries	266	236	898	5.8	1983	16
Developing countries	1443	713	126	4.1	93	13
(Sub-Saharan Africa	231	67	7	4.5	70	24
Arab States	96	44	28	6.4	240	15
Latin America and the Caribbean	161	103	39	4.4	180	09
Eastern Asia and Oceania	482	289	24	2.9	55	10
Southern Asia)	464	197	24	3.6	86	15
World total	1709	950	1024	5.5	-	-

Based on the World Education Report, UNESCO

Education systems and what they need in the way of financing are not fixed. On the one hand, population changes and the expansion of enrolments, particularly in developing countries, and, on the other, the limited quantity of resources available, mean that education systems in many countries are caught in a financial vice. It is very important in many countries for the financial problems to be solved so that enrolment can be expanded to cope with an ever-increasing population.

Population growth and the development of education are going to mean that education systems need more finance. The greatest changes will continue to occur in sub-Saharan Africa.

The number of school places needed is linked first of all with changes in the population. Whereas the population of children under 15 years of age has diminished over the last 20 years in the developed countries, it has increased considerably in the developing countries (by 31 per cent). The African countries south of the Sahara have experienced the biggest increase (89 per cent), followed by the Arab States (75 per cent). The absolute increase in the number of young people under 15 years of age is greater in southern Asia (150 million).

Table 2. Trends in the size of the under-15 population group (millions)

	1970	1980	1990	Increase 1970 to 1990
Developed countries	283	270	266	- 6%
Developing countries	1102	1296	1443	+ 31%
(Sub-Saharan Africa	122	168	231	+ 89%
Arab States	55	72	96	+ 75%
Latin America and the Caribbean	121	141	161	+ 33%
Eastern Asia and Oceania	477	524	482	+ 1%
Southern Asia)	314	380	464	+ 48%
World total	1385	1566	1709	+ 23%

Source: UNESCO, World Education Report, 1991 - United Nations Population Division (1988 revision)

Despite presumptions of a drop in fertility, population forecasts for the beginning of the twenty-first century foreshadow still greater increases in the number of births. The number of children under 15 in the world could increase by 12 per cent between 1990 and 2000 and by 26 per cent between 1990 and 2025. The decline in population in the developed countries should continue, and the biggest increase will occur in the countries of sub-Saharan Africa, by 32 per cent between 1990 and 2000 and 105 per cent between 1990 and 2025 (World Population Projections, 1989-1990 edition, World Bank).

The impact of these population trends on the intake capacity of education systems is made greater by the expansion of enrolments. In the past 20 years, enrolment ratios have risen at all levels of education and in all regions of the world, producing increases in pupil and student numbers that are greater than the population increases, with the sole exception of primary education in the developed countries (primary education is universal in developed countries, and the figures simply record variations in population size and repetition rates).

Primary education is not yet generally available in all countries of the world. In 1990 the average gross primary-level enrolment ratio for the countries of sub-Saharan Africa was 76 per cent. This average overvalues the real enrolment ratio by taking into account the particularly large number of repetitions in this region of the world. It also masks considerable disparities; in several countries the number of primary-school pupils represents less than a third of the population in the age group normally enrolled at that level. The projections made by UNESCO for 2000 foreshadow considerable increases in enrolments but do not suggest that primary education will be universally available in all countries. It is to be expected, nevertheless, that there will be a very large increase in the school population, particularly in the countries of sub-Saharan Africa. In absolute numbers of pupils to be enrolled the biggest increases between 1988 and 2000 will occur in Southern Asia (52 million) and in Sub-Saharan Africa (49 million).

Table 3. Enrolment in formal first-level education (millions)

	1970	1988	2000	Increase	
				1970 to 1988	1988 to 2000
Developed countries	125	112	110	- 11%	- 2%
Developing countries	308	486	631	+ 57%	+ 30%
(Sub-Saharan Africa	21	55	104	+ 158%	+ 90%
Arab States	13	28	42	+ 124%	+ 49%
Latin America and the Caribbean	44	73	88	+ 65%	+ 21%
Eastern Asia and Oceania	146	197	212	+ 35%	+ 8%
Southern Asia)	72	126	178	+ 76%	+ 40%
World total	433	598	741	+ 38%	+ 24%

Source: UNESCO, World Education Report, 1991.

Enrolments in second-level education have increased considerably in all regions of the world over the last 20 years. Pupil numbers increased by a factor of 2.4 in the developing countries between 1970 and 1988. The prospects considered applicable for the year 2000 show a larger percentage increase than for first-level education. Family demand and the expansion of primary education are leading to very considerable pressures on secondary education systems. For this level, too, the biggest percentage increase is expected in sub-Saharan Africa (165 per cent between 1988 and 2000), because of the very considerable population increase in the region and the backwardness of enrolments. The biggest absolute increase is expected in the countries of southern Asia (38 million). If these developments come about the gross secondary-level enrolment ratio in 200 will reach 33 per cent in the countries of sub-Saharan Africa, 54 per cent in the developing countries as a whole and 101 per cent in the developed countries.

Table 4. Enrolment in formal second-level education (millions)

	1970	1988	2000	Increase	
				1970 to 1988	1988 to 2000
Developed countries	77.8	92.1	97	+ 18%	+ 5%
Developing countries	82.6	201.6	319	+ 144%	+ 58%
(Sub-Saharan Africa	2.2	11.7	31	+ 430%	+ 165%
Arab States	3.5	13.8	27	+ 294%	+ 95%
Latin America and the Caribbean	10.7	23.5	35	+ 120%	+ 49%
Eastern Asia and Oceania	35.4	83.6	116	+ 136%	+ 39%
Southern Asia	25.4	63.9	102	+ 152%	+ 60%
World total	160.3	293.7	416	+ 84%	+ 41%

Source: UNESCO. World Education Report, 1991.

In **higher education**, student numbers are also undergoing a very substantial increase in both developing and developed countries, even though students represent a small proportion of the whole population. The gross enrolment ratio in higher education in 1990 reached 37 per cent in the developed countries and 8 per cent in the developing countries.

Population increases and the expansion of enrolments have led, and are still going to lead, to very considerable pressure on education systems at all levels--primary, secondary and higher--making it necessary for an increase in resources so that a growing number of pupils can be admitted. Sub-Saharan Africa is the region of the world where the increase in pupil numbers will be the greatest, both for population reasons and because of the region's backwardness in enrolments.

Economic and financial difficulties are limiting State resources for education

A look at past and projected population changes shows that the problem of finance for education does not arise in anything like the same terms in the industrialized countries, where population changes have stabilized and enrolments have already broadly developed, as in countries that are having to face up to considerable population growth and the expansion of enrolments.

The developing countries that have to manage substantial changes in pupil numbers are also those that, for the last 15 years or so, have been facing very substantial economic and financial difficulties.

The decline in activity in the industrial countries, the drop in the price of basic products, sharp increases in the price of petroleum products and the increase in the price of imported goods have led to serious disequilibria in the balance of payments in many countries and have compelled them to borrow.

The economic slowdown has been very marked, and in many African countries economic growth has fallen short of population growth, leading to a drop in per capita GNP during the 1980s.

The economic downturn, the balance of payments deficit, the budget deficit and the excessive burden of repaying external debt have led to a crisis that has prompted countries to adopt austerity financial policies, either freely or under pressure from the World Bank and the International Monetary Fund. Policies aimed at re-establishing macroeconomic balances have placed limits on public expenditure.

Education systems compete for public resources with the other sectors of State activity and have therefore suffered from the general budgetary restrictions and from the policies adopted concerning the distribution of public funds. The percentage of public expenditure allotted to education has fallen in one out of two of the countries of Africa, one out of three of the countries of Latin America and the Caribbean and one out of three of the countries of Asia. Public expenditure on education is lower than defence expenditure in the Arab States and the countries of Asia and in the least-developed countries group.

The effects of the crisis have been felt most severely in the African countries. During the 1980s the per capita GNP fell in three African countries out of five, and the proportion of GNP allotted to public expenditure on education fell from 4.9 per cent in 1980 to 4.5 per cent in 1988. If one takes the countries in the world where school enrolment is not widespread, the increase in pupil numbers was below the population growth rate in 18 countries, resulting in a fall in the enrolment ratio. Of these 18 countries, 15 are in Africa. In 16 African countries out of the 22 for which data are available these developments led, between 1980 and 1988, to a drop in average expenditure per primary-school pupil in relation to the average national wealth.

Table 5. Trends in the proportion of GNP devoted to public expenditure on education

	1970	1975	1980	1985	1988
Developed countries	6.0	6.4	6.0	6.0	5.8
Developing countries	2.9	3.6	3.8	4.0	4.1
(Sub-Saharan Africa)	3.1	3.8	4.9	4.3	4.5
Arab States	5.0	5.9	4.4	6.0	6.4
Latin America and the Caribbean	3.3	3.6	3.9	4.0	4.4
Eastern Asia and Oceania	1.9	2.3	2.7	3.	2.9
Southern Asia	2.6	3.0	4.0	3.4	3.6
World Total	5.5	5.8	5.5	5.6	5.5

Source: World Education Report, 1991.

The very low per capita GNP in the poorest countries leads to production costs for educational activities that are relatively high in relation to national wealth. Among the developing countries, the African countries are those where the costs of education in relation to the national wealth are the highest. In 1988 average expenditure per first-level or second-level pupil represented 24 per cent of the per capita GNP in African countries--a level higher than in the other regions of the world.

This relative level of average expenditure was achieved despite a high pupil/teacher ratio (over 38.1 in half of the African countries in 1988). This situation can be explained by the low per capita GNP, since a primary teachers' salary may, in some countries, represent as much as six to eight times the average national wealth.

Table 6. Trends in average expenditure per pupil (first and second level) as a percentage of per capita GNP

	1970	1975	1980	1988
Developed countries	17	18	18	16
Developing countries	11	10	12	13
(Sub-Saharan Africa	33	33	24	24
Arab States	24	16	13	15
Latin America and the Caribbean	9	9	9	9
Eastern Asia and Oceania	8	8	9	10
Southern Asia	12	11	19	15

Looking beyond the purely financial aspects, one notes that the sometimes considerable reduction in average expenditure per pupil often means a reduction in teachers' real salaries, a lowering of their motivation, a very considerable cutback in non-salary-related expenditure on running costs, the purchase of educational materials and building work, and consequently a deterioration in the working conditions of teachers and pupils.

The generally recommended solutions are to make better use of existing resources and find other sources of financing.

To enable State budgets to cope with the difficulties of financing education systems, the measures generally recommended by the World Bank and by many economists are aimed either at better use of existing resources through modification of the parameters for producing an education service, or an improvement in the administration and management of the system, or recourse to new sources of funding.

These proposed measures do not exclude increasing public expenditure on education by raising taxes or the proportion of public funds allotted to education (or both). Some countries, such as Ghana and Zimbabwe, have in fact managed to increase the proportion of the State budget allotted to education.

Governments must be constantly concerned to make more effective use of public resources. this concern is simply more pressing at times of financial stringency. Making better use of resources and achieving more with the same means amounts to reducing unit costs and improving the efficiency and management of the system.

To reduce the costs of education, it is possible to act on the process by which education is provided:

- by increasing the number of pupils in each class. The size of classes is a variable that has to be adjusted so as to match the number of school places needed to the number of classes the system can

finance. There is a body of research that has concluded that the average size of classes has little effect on what pupils learn at school. Nevertheless, the very high average number of pupils per class in many African countries greatly reduces the possibility of taking such a step in countries with the greatest difficulties.

- by using double or triple shift systems in primary education. Teachers are responsible for two or three groups of pupils. This solution has the disadvantage of reducing the pupils' classroom time but can be effective in also reducing the number of teachers needed. Introducing the system in practice is not always easy and may lead to teacher underemployment. It also raises management problems relating to the use of one classroom by two or three groups of pupils.

- by using new and less-expensive teaching technologies. Distance-teaching experiments in higher education have been carried out in several countries. Experiments with teaching by television are less conclusive.

- by allotting some teaching time to assistants whose qualifications are not as high as those of established teachers and who are therefore paid less.

- by making economies of scale (not having schools that are too small). This is not always possible, particularly in areas where population density is low.

Improving the efficiency of education and reducing repetition and dropout makes it possible to increase the relevance and effectiveness of educational expenditure. Repetition is particularly common in African education systems.
The repetition rate in primary education is above 20 per cent in more than half the countries of Africa. In the rest of the world, only five countries exceed this figure. Reducing the number of repetitions makes it possible to cut the total number of school places needed.
Reducing dropout tends to increase the number of pupils in school by extending the length of schooling. Improving the efficiency of the education system makes expenditure on education more effective but may lead to an increase in pupil numbers and hence to a greater need for funds.
In addition, improving efficiency means having to undertake measures that make it possible. Among these, the most effective are acknowledged to be the provision to pupils of a sufficient number of textbooks and to teachers of teaching materials. Improving quality and efficiency requires extra expenditure.

Decentralizing the administration, giving greater autonomy to schools and improving the management of systems can also make it possible to increase the effectiveness of expenditure on education.
Decentralization and autonomy for schools make it possible to adapt educational expenditure more successfully to the needs of the schools and to give school principals and local administrators greater responsibility. These measures assume that there exists a framework of regulations and laws, that responsibilities are clearly defined and that supervision of resources and expenditure exists, so as to avoid the problems of corruption and the embezzlement of public funds.
Improving administrative services, particularly management of the assignment of teachers, should allow more efficient use to be made of the resources available to the education system. Improved tax collection can provide States with additional resources while ensuring that there is equality in shouldering the tax burden.

Apart from State funds, the sources of finance that it is possible to use for education are chiefly those provided by families, local authorities, local communities or businesses. Outside aid and self-financing by schools also make it possible to reduce the pressure on public funds.

Contribution by families to the financing of education may take the form of enrolment fees. This is particularly recommended for higher education--and, in general, for educational levels that are over and above basic education. The fact that those who benefit from such education will have advantages later on in the form of higher pay justifies their making a contribution to its cost. to maintain equality of access to these levels of education, systems of study grants and loans should be introduced along with enrolment fees.
A graduate levy can also make it possible to recover some of the money spent on individuals by the State.
In regions where the financial resources of families are small their contribution can take forms other than cash, such as the provision of food for the teachers.
Schools must not ask families for pointless or excessive expenditure. The compulsory school uniform customary in some countries places a considerable financial burden on families that could be avoided.

Local communities, whether or not they have the status of local authorities, can make a contribution by building schools, housing teachers and, sometimes topping up the teachers' pay. In some countries village communities have gone so far as to provide the whole of the teachers' pay to make sure that there is a school in the village. The contribution made by communities may be in the form of cash or may take some other form. The involvement of communities can make it possible to reduce building costs by using local materials and traditional techniques.

Approaches can be made to **firms**, but their involvement should probably be focused more on vocational or higher education. Some countries have introduced corporation taxes. Incentives in the form of tax exemptions can also be introduced. There is certainly little opportunity in Africa for firms to finance education, but greater opportunities may exist in countries with intermediate-level revenues.

Operations enabling schools to be **self-financing** have been carried out in several countries. For higher-education establishments these may take the form of research contracts, contracts for providing training for firms, payment for services, rent or payment for advice. The way to self-financing may also lie in the direction of productive work by the pupils. Some experiments have been carried out in primary schools without any notable results, but it seems a more promising possibility for technical and vocational schools, where the economic need overlaps with the aim of education, to which schools must continue to give priority.

Recourse to **outside aid** is necessary in those countries with he greatest difficulties whose national resources do not make it possible to finance education systems. This sort of financing requires the co-ordination of aid from various sources and integration of the undertakings financed into national policies for the development of educations systems.

The World Bank also recommends the establishment of a network of **private establishments**, which, provided they do not receive subventions, make it possible to increase enrolments without the use of public funds. Private establishments in receipt of subventions can make it possible to expand enrolments while limiting average public expenditure per pupil.
Making use of the private sector to provide education raises problems with regard to equality of access to education and supervision of schools by the public authorities.
Religious groups play an important part in many countries in the management and financing of private educational institutions.
The World Bank suggests that the framework of laws and regulations should be so constructed as at least not to prevent the development of an array of private establishments.

Some observations for the Commission to think over

- **There is no denying either the demographic pressures or the economic and financial pressures** Adjustments have to be made every year between the demand for education, which is linked to the population, and the supply of education, which is linked to the resources available, and sometimes to the detriment of the quality and consistency of the education system or to the detriment of fairness. The public authorities in States are responsible for choosing the policies that will make it possible to face up to these pressures and guide the development of education systems.

- **Education is an economic investment.** A country's economic development calls for greater productivity of labour and capital and therefore requires the working population to be able to use complex technologies and to be creative and adaptable. Such aptitudes are very much dependent on the standard of initial education people receive. The money spent on education is not solely a social item of expenditure. The purpose of education systems is to train people for citizenship, provide for the transmission of knowledge and culture from one generation to another and develop people's talents. Education systems also have to provide the skills economies will need in the future. In addition, education is a way of fighting poverty. Those sectors of the population that have no access to basic social services remain in poverty and are a hindrance to development. Expenditure on education should not be regarded simply as social expenditure and a burden on public finances.

- **Investment in education has long-term effects**. Underinvestment in education has an impact on the structure of the working population for 30 or 40 years.

- **Investment in education must be protected in times of crisis.** Education is a pre-condition for long-term economic and social development. To preserve the chance of long-term development, and because many years and considerable effort are needed in order to rebuild run-down education systems, expenditure on education must be maintained during times of crisis.

- **Only the re-establishment of adequate economic growth can make it possible to finance the development of education systems**. The measures recommended to overcome the difficulties of financing education systems are not enough to cope with the very considerable increase in pupil numbers.

- **International solidarity is vital** to enable those countries experiencing the greatest difficulties, in connection with both demographic changes and economic growth, to meet present and future problems. The countries of sub-Saharan Africa, where such problems are most acute, must be a priority for international aid.
  Unless there is adequate economic growth, and unless international aid is provided, the noble objective of Jomtien--fundamental education for all--will in many countries remain nothing more than a pious hope.

- **There is no single solution**.
  There cannot be one single political response to the problem of how to finance education systems. It cannot be the same in all countries, because of the variety of national situations, the different levels of economic development and the state of education systems. There may also be different solutions for different levels of education. Recourse to non-public funding can be justified in the case of vocational and higher education.

- **Priorities must be laid down for public action**.
  Shortage of resources must lead to questions being asked about the priorities of public action.
  Should States not give economic and social development top priority?
  Where education is concerned, public spending must be focused first of all on the expansion and quality of basic education.
  Expenditure of an educational nature must take pride of place over expenditure on the subsistence of pupils and students.

- **Teachers' working conditions**.
  Education takes place primarily in the classroom, between the teacher and the pupils.
  The effectiveness of education is linked first of all to the teacher's motivation and quality and to the teaching materials available for his or her use.
  To make sure that expenditure on education is effective, teachers must be properly paid, they must be given proper working conditions, and they must enjoy social esteem.

- **Borrowing may in some cases be a means of financing development and avoiding the decay of education systems.**
  As education is a very-long-term economic investment it is logical to consider financing it by very-long-term loans, thus transferring to future generations a portion of the present investment from which they will benefit. This line of reasoning is used with reference to individuals in promoting systems of loans to students and may also be used for a whole country.
  Borrowing may go counter to policies that seek to reduce external debt.
  Nevertheless, if the debt is not excessive or if the danger of the decay of the education system is too great it can enable some countries to maintain and expand their educational investment.
  Developing countries should be able to take out very-long-term loans at preferential rates to finance the development of their education systems. The benefits of a re-establishment of economic growth should not be seriously curtailed or even totally nullified by repayment of the external debt.
  The repayment of loans for economic and social development should be spread out over a long period.